Gravity's Bridge: Investigating the Link between Parallel Space, Negative Matter, and Dark Matter's Interaction with Our Universe

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Abstract

The circle and the straight line are two expressions of the same mathematical principle, revealing the intricate interplay between order and chaos in the universe. This principle also explains why the proper time for light is null. In this study, we explore the concept of light acceleration, which is a shared property with all matter in the universe. Similarly, we delve into the abstract nature of dark matter, viewing it as a body in the universe whose components remain unknown, yet interacts with our world only through gravity. Notably, Negative matter bends the fabric of spacetime according to a novel model, revealing the existence of two interconnected universes or spaces through gravity.

INTRODUCTION

Dark matter was first identified by Fritz Zwicky in 1933 [1], [2]and later rediscovered by scientists Vera Rubin and Kent Ford [3]. In 1928, Dirac proposed his theory of antimatter [4], which has since played a significant role in the development of the theory of a CPT symmetric universe [5]. In an attempt to better understand dark matter and antimatter, we posed the question of whether dark matter could have negative mass [6]. Our investigation relied on mathematical principles derived from trigonometric geometry, as well as observations of the similarities between the speed of light and infinity in special relativity [7]. Additionally, we postulated that antimatter could have negative mass [8].

Exploring Negative Mass and Space-Time Fabric: A Novel Model

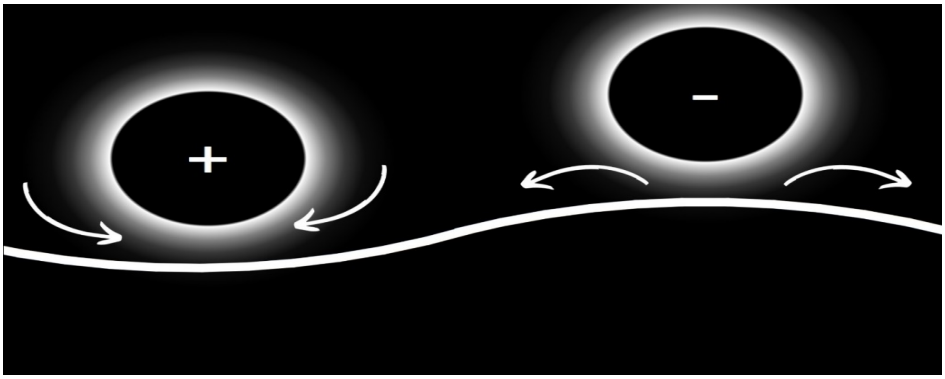

figure 1: Positive and negative matter bend the fabric of space-time.

The existence of positive and negative charges in the electric force raises the question of why there is no such concept of positive and negative mass in the gravitational force within our universe. To address this issue, we propose a novel model that elucidates how negative masses can bend the fabric of space-time. In our model, we posit that the space-time texture resembles a paper with two pages: the first page contains positive matter while the second page contains negative matter, with the black hole acting as the separator between the two.

Our conclusion is drawn from the double-slit experiment of the electron, which demonstrates that all matter in the universe has a dual nature, existing both as a particle and a wave, similar to light. Furthermore, dark matter, which does not interact with light, does not interact with any particles or waves in the universe, rendering its kinetic momentum zero. We also assume that antimatter has a negative mass to resolve the problem of baryon asymmetry. It is worth noting that this model is not in contradiction with the proposed figure. 2 model.

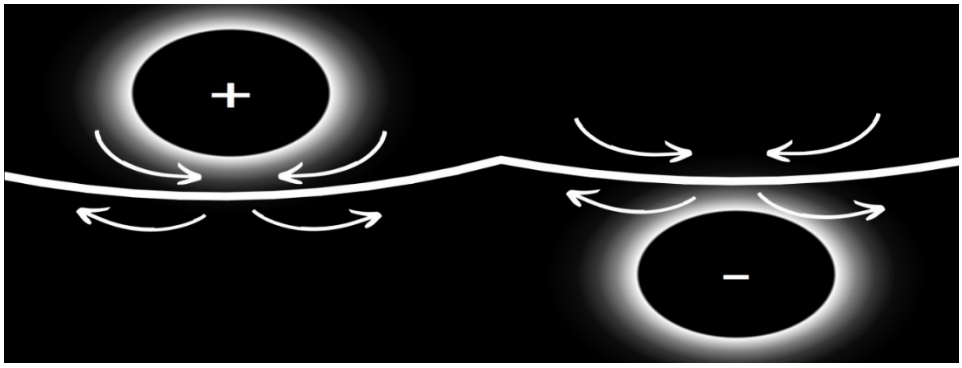

Figure 1: Negative matter exerts attractive gravitational forces on positive masses and repulsive gravitational forces on negative masses.

Proportional Properties and Observer Effects in the Euclidean Universe

For $n \neq 0$ we noticed that it's always

$$\lim_{x \to +\infty or -\infty} \frac{n}{+\infty} or \frac{n}{-\infty} = 0 \tag{1}$$

$$\lim_{x \to x_0^+ or x_0^-} \frac{n}{0} = +\infty or -\infty \tag{2}$$

Which made us suggest that

$$\frac{n}{0} = \pm\infty; +\infty = -\infty \tag{3}$$

This equation suggests that the circle and the straight line are equivalent and exist only in two specific times. These times are when the universe is in a complete state of chaos and when it is in a complete state of order. The circle and the straight line represent the paths in wich energy is fuully conserved, with no energy loss. They also symbolize perpetual motion and eternal energy.
Let us assume that infinity is a number

$$tan(\frac{\pi}{2}) = \pm\infty \tag{4}$$

From these calculations we can solve the undefined operations

$$+\infty - \infty = \pm\infty \tag{5}$$

We note that

$$+\infty + \infty = +\infty; +\infty - \infty = +\infty; +\infty + n = +\infty; n \in \,]-\infty; +\infty\,[\quad (6)$$

This is similar to Einstein's relative velocity summation equations (8) c+c=c ;c+v=c ;c-c=c (Because the speed of light is constant in all reference frames) So there is a relationship between the speed of light and infinity, and through this observation we concluded the following:
When we choose $\tan(\frac{\pi}{2}) = n$
Every tangent of the other angles changes according to an approximate equation $tan(\alpha) = n\sin(\alpha)$
Example: when we choose $\tan(\frac{\pi}{2}) = 1$

$$1 + 1 = \pm 1; 1 - 1 = \pm 1; +1 = -1; \frac{n}{0} = \frac{-n}{0} = \pm 1; n \in \,]0; +1\,[\quad (7)$$

$$\tan(45) = 1 \times \sin(45) = 0.7 \quad (8)$$

$$\tan(45) + \tan(45) = \tan(63.43) \quad (9)$$

$$0.7 + 0.7 = 0.89 \quad (10)$$

And so that we do not get confused, we will call tan(90)= n the tangent of the angle with base n and we will denote it by

$$\tan(\alpha)_n = nsin(\alpha) \quad (11)$$

When Tangent changes also changes sin and cos

$$\cos(\alpha)_n = \tan(\tan^{-1}\cos\alpha)_n; \sin(\alpha)_n = \tan(\tan^{-1}\sin\alpha)_n \quad (12)$$

Just as there is an infinite number of finite numbers there is also an infinite number of infinite numbers and when $tan(\frac{\pi}{2}) = n$ n becomes an infinite number
In the case of speeds $tan(\frac{\pi}{2}) = c$

$$c + c = c; c + v = c; c - c = c \quad (13)$$

Also

$$-c = +c; \frac{v}{0} = \frac{-v}{0} = \pm c \quad (14)$$

That is why the speed of light is constant despite the movement of the source because the speed of light is infinite, but in the equation of summing the relative velocities

$$u + v = \frac{u + v}{1 + \frac{uv}{c^2}} \tag{15}$$

So $0.5c + 0.5c = 0.8c$ but in our equations we found $0.5c + 0.5c = 0.75c$ this is because our equation 11 is assumed (1+1=2 but if choose $tan(\frac{\pi}{2}) = \pm\infty$).
In special relativity, propre time τ is 0, so the speed of light is undefined . $\overrightarrow{s}$ vector for light is null

$$0 = ct^2 - x^2 \tag{16}$$

$$ct = \pm x \tag{17}$$

$$(ct = 1; x = \pm 1) \tag{18}$$

Means that light travels in both directions at the same time, our analysis suggests that it is undefined. Although the maximum speed is c, nothing can reach this speed. This explains the photoelectric effect and why light bends in front of huge masses. In the context of special relativity, the speed of light must always travel through a unit of distance per unit of time in the space-time diagram.For general relativity equations, proper time by lambda cannot be replaced in orbital or geodetic equations, so the path of light cannot be determined.

$$\lim_{v \to c} v = c \tag{19}$$

The numerous equations proposed by Einstein accurately describe the curvature of light in the presence of mass and energy. However, it is important to note that light does not travel at the maximum speed, and the particle that does travel at this speed, which we will refer to as "true light," moves in a straight line. This is because all coordinates on the space-time diagram must adjust to accommodate the motion of true light, which always travels a unit distance per unit time at a constant velocity, consistent with Newton's laws. Therefore, there is no difference between uniform and constant motion, as they are equivalent.

The constant velocity of true light is consistent across all reference frames and is observed as traveling in a straight line by all observers. These logical deductions increase the likelihood that Equation 3 is indeed accurate.
To clarify the previous equations in a better way, we have constructed a generalized equation:

$$\tan \frac{\pi}{2} = 100\% \tag{20}$$

Through this equation, the universe attempts to become a Euclidean space by assigning specific properties to each object based on its mass. For example, it does not attempt to equalize the temperature between equal objects. Instead, heat transfers from hot to cold, allowing each object to have a specific and proportional amount of heat based on its mass and other physical information.
The goal is to assign a constant velocity and uniform density to each object, proportionate to other information, in order to make the space Euclidean. All objects in the universe must obtain these specific properties that are proportional to one another. If an object has a constant velocity, it moves in all directions, and its path cannot be determined. Similarly, if it has a constant rotational speed, it rotates in all directions. In fact, if an object moves at a constant velocity, it will always move in a straight motion, even in the presence of external forces. An Euclidean space consists only of circles, straight lines, and perpetual motion with zero energy loss.
As for the equation of relative velocity summation, it can be generalized to include all physical information of the object, which attempts to be proportionate to one another.

$$\frac{X_1}{X_C} + \frac{X_2}{X_C} = \frac{\frac{X_1}{X_C} + \frac{X_2}{X_C}}{1 + \frac{X_1}{X_C} \times \frac{X_2}{X_C}} \tag{21}$$

X_C :The physical amount that object is attempting to attain.
However, in the example of temperature, we noticed that objects tend to equalize the temperature between them, which contradicts what we said previously. The explanation for this is that the universe has a detector that operates with the four fundamental forces and relies more on gravity. When the detector measures this information, a regulator balances these pieces of information with each other. Since the number of objects in the universe is infinite, eventually, each object will obtain its specific and proportional information according to one another. This detector is what puts the object in an observed state, similar to the detector in our eyes. As for small particles,

the detector does not work effectively due to its heavy reliance on gravity, which leads to the regulator's function only in trying to assign the particles with their specific information directly.

Unveiling Negative Mass and its Impact on Galactic Dynamics

$$\nabla^2\varphi = 4\pi G\rho_{m_-} \tag{22}$$

In the second space, negative mass applies a negative curvature to the fabric of spacetime, causing it to converge at the edges of the galaxy. Moreover, when objects enter inside a black hole, they do not disappear but continue to exert their gravitational pull in the preceding space. Although it is highly unlikely for a high-density body like the Sun to form in such a space due to the repulsive gravity, we cannot definitively assert this due to our limited understanding of the laws of physics. Despite our proposed model providing a good explanation for dark matter and its non-interaction with light, as well as its abundance at the edges of the galaxy, and also addressing the problem of baryon asymmetry, there are still numerous challenging scientific endeavors to undertake and discover in this regard.

CONCLUSION

In this research, we attempted to address well-known dilemmas such as dark matter, baryon asymmetry, and the speed of light acceleration, which led us to develop a unique physical model that may solve these problems. Although proving these ideas is extremely challenging, they provide a good explanation for cosmic phenomena. When the universe strives to imbue each body with specific information that is directly proportional among them, it tends to move in circles and straight lines. This motion could enable us to utilize new technology for remote particle control, allowing them to move in more circular or linear trajectories. Furthermore, the interaction of negative matter with the fabric of spacetime in our new model might aid in developing equations that unify electromagnetism with gravity, potentially opening up new avenues for understanding the universe and black holes.

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